

- FIG. 31. *Vanessa atalanta* ♂, Aug. 23, 1897. Captured by F. A. Dixey at Morthoe, N. Devon. The injury can hardly have been produced otherwise than by a bird snipping a notch in all four wings when they come together in the attitude of repose as shown in the figure.
32. *Epinephele lycaon*, July 22, 1898. Captured by E. B. Poulton between Visp and Stalden, Valais, about 2450 feet. The same conclusion as in the description of Fig. 29.
33. *Vanessa atalanta* ♂, Sept. 23, 1901. Captured by A. H. Hamm in the University Parks, Oxford. The character of the injury implies an attack by a bird, probably made in one of the short rests when the insect assumed the attitude shown in the figure.

EXPLANATION OF PLATE XI.

INJURIES TO DIRECTIVE MARKS AND STRUCTURES ON THE WINGS OF SOUTH AFRICAN BUTTERFLIES.

Injuries inflicted in the neighbourhood of special marks or structures near the anal angle of hind-wing or apex of the fore-wing.

All the figures are about $\frac{2}{3}$ of the natural size.

All the specimens not otherwise described were captured, on the dates mentioned, at Salisbury, Mashonaland, 5000 feet, by Guy A. K. Marshall.

- FIG. 1. *Precis antilope* ♂, May 19, 1898. Rests on leaves of low herbage and rarely on the ground. Birds are the most likely enemies, and the specimen was probably at rest when both "tails" were shorn off.
2. *Precis euama* ♀, May 1900. Same habit and conclusions as in the last figure.
3. *Spindasis natalensis*, June 13, 1900. Captured by Champion B. Russell near Eshowe, Zululand. Flight very rapid, settles on outer leaves of trees and never on ground. Almost certainly injured by a bird.
4. *Precis archesia* ♂, March 9, 1901. This unilateral injury was probably inflicted on the wing.
5. *Charaxes guderiana* ♂, Dec. 31, 1898. All *Charaxes* here represented fly and settle like *S. natalensis*. Birds by

far the most probable enemies unless there is evidence of the attacks of a mantis (possible but not likely in the example represented in this figure).

- FIG. 6. *Tarucus plinius* ♂, March 11, 1899. Flies at medium pace, settles on bushes and low trees, birds the probable enemies. The injury moreover suggests a bird.
7. *Hypolycaena philippus* ♂, March 11, 1899. Habits and conclusions as in the last figure. These two Lycænids and many other butterflies will settle on the ground in damp spots to drink, but Mr. Marshall has not seen lizards in such places.
8. *Papilio demodocus* ♂, March 2, 1901. Flies rapidly, settling on flowering bushes; probable enemies mantides or birds; lizards improbable. Character of injury suggests posterior part of both hind-wings shorn off while at rest by a bird.
9. *P. demodocus* ♂, Jan. 24, 1901. Same conclusion as in last figure.
10. *Charaxes achæmenes* ♀, March 6, 1898. See description of Fig. 5.
11. *Catochrysops parsimon* ♀, Jan. 25, 1899. Very rapid flight, settling on ground and low veldt flowers and at night resting on grass-stems. Lizards probable enemies, but the character of the injury suggests a bird.
12. *Axiocerces harpax* ♂, March 3, 1899. Habits and conclusions as in Figs. 6 and 7.
13. *Charaxes saturnus* ♂, March 6, 1898.
14. " " " March 12, 1898.
15. *C. guleriana* ♀, March 6, 1898. In this and the two preceding figures, see description of Fig. 5.
16. *Uranothauma poggei* ♂, Jan. 1901. A woodland species flying at medium pace and settling on low flowers. Birds probable enemies.
17. *T. plinius* ♀, March 11, 1899. Injury suggests bird. Probably seized on the wing.
18. *Axiocerces amanga* ♂, Dec. 27, 1900. Habits and conclusions as in Figs. 6 and 7. Probably seized at rest with wings closed.
19. *H. philippus* ♂, March 11, 1899. Injury suggests bird. Probably attacked at rest.
20. *C. saturnus* ♂, Jan. 2, 1899. Symmetry of injury suggests conclusions as in Figs. 8 and 9.
21. *Teracolus achine* ♂, April 9, 1899.
22. " " " April 2, 1899.

- FIG. 23. *Teracolus achine* ♀, March 11, 1899. In this and the two preceding figures the unilateral injury suggests an attack on the wing.
24. *Pyrameis cardui* ♂, Dec. 31, 1898.

EXPLANATION OF PLATE XII.

SEASONAL PHASES OF BUTTERFLIES OF THE GENUS *PRECIS*.

Representation of parent and offspring in *Precis sesamus* and *P. antilope*.

Demonstration of the seasonal phases of South African Butterflies of the genus *Precis*.

All the figures are about $\frac{9}{10}$ of the natural size.

All the specimens represented were captured or bred by Guy A. K. Marshall.

- FIG. 1. *Precis sesamus*, form *natalensis* ♀, Salisbury, 5000 feet, captured Feb. 27, 1898, after it had laid three eggs. Parent of butterflies represented in Figs. 1a and 1b.
- 1a. *Precis sesamus* ♂, offspring No. 1 of butterfly represented in Fig. 1. Egg laid Feb. 27, hatched March 5, larva pupated March 31, imago emerged April 15.
- 1b. *Precis sesamus*, form *natalensis* ♀, offspring No. 2 of butterfly represented in Fig. 1. Egg laid Feb. 27, hatched March 5, larva pupated April 5, imago emerged April 20. A distinctly dark individual showing some slight tendency towards *sesamus*, especially in the width of the black margin of the hind-wings and the size of the blue spots in this margin.
- These two offspring show the overlap of summer and winter phases remarkably well. The summer form, Fig. 1b, even appeared a few days later in the beginning of winter than the winter form, Fig. 1a. At the same time the former is unusually dark.
2. *Precis sesamus*, form *natalensis* ♀, Salisbury, 5000 feet, captured March 6, 1898, after it had laid one egg. Parent of butterfly represented in Fig. 2a.
- 2a. *Precis sesamus* ♂, offspring of butterfly represented in Fig. 2. Egg laid March 6, hatched March 12, larva pupated April 7, imago emerged April 30. The last part of larval